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MODERN LANGUAGE PROJECT OF THE MASSACHUSETTS COUNCIL FOR PUBLIC SCHOOLS, TEACHERS TRAINING DIVISION, SUMMARY OF RESEARCH ON "PARLONS FRANCAIS," YEAR TWO.

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THE EFFECTS OF SEVERAL INDEPENDENT TEACHER VARIABLES IN AN INSTRUCTIONAL APPROACH USED IN CONJUNCTION WITH A TELEVISED, 2-YEAR FRENCH CURRICULUM WERE INVESTIGATED. THE VARIABLES WERE TWO VARIATIONS EACH OF TEACHER TRAINING, CLASSROOM PRACTICE, AND TEACHER FLUENCY IN FRENCH--(1) TEACHER TRAINING BY HALF-HOUR TELEVISION PROGRAMS VERSUS TRAINING BY HALF-HOUR TAPE-RECORDINGS, (2) PRACTICE PREPARED AND DIRECTED BY TEACHERS VERSUS PRACTICE VIA SPECIALLY PREPARED TAPE-RECORDINGS, AND (3) THE USE OF TEACHERS JUDGED FLUENT VERSUS THOSE JUDGED TO BE NONFLUENT ON THE BASIS OF SPECIALLY CONSTRUCTED ORAL TESTS. EFFECTS OF THESE VARIATIONS ON THE ACHIEVEMENT OF 45 SECOND-YEAR FRENCH CLASSES OF FIFTH-GRADE CHILDREN WERE MEASURED AT THE END OF 1 YEAR OF INSTRUCTION. LISTENING COMPREHENSION PROVIDED THE MAJOR BASE FOR MEASUREMENTS. THE TWO FORMS OF TEACHER TRAINING PROVIDED LITTLE DIFFERENCE IN PUPIL GAIN. THIS STUDY FOLLOWED AN EARLIER ONE CONDUCTED DURING THE PREVIOUS YEAR WITH THE SAME STUDENTS WHEN THEY WERE ENROLLED IN 1ST-YEAR FRENCH. OVER THE 2-YEAR PERIOD, SIGNIFICANT DIFFERENCES WERE OBSERVED IN FAVOR OF FLUENT AND MODERATELY FLUENT TEACHERS WHEN CLASSROOM WORK WAS CONTINUED BOTH YEARS BY THESE TEACHERS. (JH)

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Ralph Garry and Edna Mauriello

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Introduction

The postwar years have seen a rapid expansion of foreign language instruction in the elementary schools of the nation. A recent survey shows that more than 750,000 elementary school pupils are studying a foreign language in some 500 or more school systems, with the most popular languages being Spanish, French, and German. The typical pattern of instruction being followed is some variant of a FLES (Foreign Language in the Elementary School) program in which a specialist in a given modern language serves as an auxiliary teacher of the foreign language at a given grade level in the elementary school. In contrast with the traditional parallel second language learning at the secondary school level with its emphasis on vocabulary lists, grammar, and translation, the FLES program utilizes the aural-oral approach, patterned after the native language learning of early childhood. The child or group of children hear a phrase or sentence. Perception is followed by recognition of meaning either from memory or situational context. Through imitation of a model, the child produces what he has heard and partially or wholly understood. He goes through stages of recognition, imitation, repetition, variation, and selection, and as a result of practice, correction, and further practice, his imitations change from repetitions of meaningful utterances to selected utterances spontaneously used in particular situations to express particular situations to express particular ideas.

FLES programs capitalize on the younger child's capacity to mimic speech accurately and manipulate language patterns easily, his enjoyment of language experiences, and his readiness to learn, to listen, to communicate in playful and dramatic situations. By the age of twelve, the child's increased power of abstract reasoning spurs an analytical and rational approach to language, and his well established speech habits are more resistant to the modifications required to pronounce the sounds of the second language.

The pace of expansion of FLES programs has been limited by the number of specialists available possessing both pedagogical and linguistic skill, and the limited number of training programs at the college level for preparing such specialists. Under such circumstances, efforts to utilize television as an instructional medium to compensate for the shortage of specialists is not surprising. Television makes it possible to provide a much larger number of children with an ideal model, a native French teacher with excellent accent. But television comes as a mixed blessing. Although it brings excellent instruction to a much greater number of children, two major difficulties occur. The first lies in its inability to adapt to individual differences, the second is the detachment of the television teacher from the learner, which is particularly acute in the development of language skill inherently dependent upon interaction between teacher and

learner. With televised instruction, follow-up activity and adaptation to individual differences normally fall to the individual classroom teacher.

Review of Research

Accepting the rationale for providing instruction in foreign languages at the elementary school level and for using television as an instructional medium (the writers assume its social justification in today's world, both in terms of short-range national preparedness and long-range human purpose) when one turns to educational research for guidance in development of such a program the cupboard is bare. To be sure there is no end to educational lore and also what might be termed institutional wisdom distilled from eons of instructional experience, but the magnitude of the effect of error involved in instructing 50,000 children simultaneously is such as to give pause to the most competent and self-assured instructor and staff.

It was not until the advent of the National Defense Education Act of 1958 that the development of materials for foreign language instruction and the design and execution of research on foreign language instruction received the support it had so long needed. Foreign language teachers, singly and by committee, had repeatedly expressed the importance of research in this area of instruction, but the experimental literature contained few reports of research, and those that were reported were seldom adequately controlled. If experiments on foreign language teaching were scarce, those concerned with the use of television as the instruction device were nonexistent. The justification for the use of television rested on the extensive literature accumulated in the audio-visual field, particularly during the post-war years when television instruction became an important topic for research.

Hoban and Van Ormer (1950) and Allen (1960) provide excellent summaries of research in audio-visual instruction from its inception to date. From these reports it may briefly be concluded that:

1. Films can teach factual information effectively over a wide range of subject matter content, age ranges, abilities, and conditions of use. This factual learning however, tends to be rather specific to the information communicated by the film.

2. Films can modify interests, attitudes, and opinions if they are designed to stimulate or reinforce existing beliefs in the audience or if the views presented are not too disparate. There is little evidence that films can make changes if they are contrary to the existing beliefs, personality structure, or social environment of the individual in the audience.

3. There is no evidence that a film is superior to other media of communication in influencing general attitude. The effect of films appears to be specific; further, that the cumulative effect of more than one film on the same theme may be needed for any lasting attitudinal changes or reinforcements to take place.

Among other findings with respect to effective use of films are the following:

1. Introductions to filmed instructional material should establish a favorable motivational set.

2. More factual learning takes place when teacher introductions and class preparations are made.

3. Teacher introductions are about equal in effectiveness to follow-up materials.

4. Introductions have a general motivating effect on all material covered but have a greater effect on the parts specifically covered.

5. Greatly increased learning from films results when there is learner participation.

6. Increased learning results from the overt verbalization of responses.

7. Learning is aided by furnishing the learner with knowledge of results.

8. The film must be paced appropriately to the performance or activity required.

9. Under certain conditions learning will be increased when questions are asked, and skills demonstrated and practiced during or after a film.

Television Instruction

Teaching by television is effective at all levels of instruction, from elementary school to military training. Its unique advantages are that it can vastly extend the reach of an excellent teacher and it can bring to students exceptional experiences quite beyond the means of conventional instruction. Elements inherent in the television form of presentation are appeal to: (a) emotions, (b) preconceived concepts, (c) the sense of enjoyment and pleasure associated with past experience of a similar nature.

The Instructional Research Program at Pennsylvania State University, while utilizing closed-circuit televised instruction in a wide range of college courses showed TV to be as effective as personal instruction in every instance. Retention studies showed the materials learned by TV were retained as well as those learned through conventional means of instruction. The conclusions resulting from studies conducted in the armed services (Desiderato, 1956; Hoban and Van Ormer, 1950; Kanner, 1954 and 1955.) are that televised instruction is (a) at least as effective as regular instruction, (b) more effective for lower-aptitude groups, (c) remembered at least as well as regular instruction.

Research findings to date have amply demonstrated the value of TV in providing enrichment content to supplement regular classroom teaching. It has been shown, too, that TV can be used to advantage for "demonstration teaching" in various subject areas and at various grade levels to show classroom teachers how to use new instruction techniques and materials. Finally, the experimental studies have tended generally to show that TV can serve as an instrumentality and process whereby every single device, technique, and process known to the art of teaching can be brought to bear in group instruction (Dunham and Lowdermille, 1956).

Language Instruction

Nostrand (1959) expressed the opinion that the main virtue of television as a medium for foreign language teaching is that it enables a selected teacher to enter into close, individual rapport with a great many students at the same time. He judges the chief limitation to be the fact that the student's response to the teacher is reduced to an imitation of real interaction between personalities so that supplementary instruction is needed in the way of live conversation between the students and one or more persons who can speak the language with him and who can discuss with him the new insights he is acquiring through foreign language study.

Three recent studies made possible by the National Defense Education Act of 1958 provide some specific data on the topic of teaching foreign languages by means of television. The first of these is a study conducted at the University of Illinois comparing the effectiveness of audio-visual devices with a FLES specialist. Starting with the basic hypothesis that "Children beginning at the fourth-grade level learn a second language effectively when they are guided through specially prepared audio-visual lessons by regular class room teachers who initially have little or no command of the foreign language being taught", the experimenters provided foreign language instruction in Spanish to six fourth grade classes located in three schools. Half of the classes were taught by telecast and tape-recordings, the other half by language specialists with native fluency. Both groups received five twenty-minute periods of instruction in which instruction was carried on through dialogues, dramatizations, question and answer sequences, monologues, songs and games. The specialists were allowed to devise their own instructional methods and pace of instruction. At the end of a year's instruction there were no statistically significant differences between the two groups on tests of listening and speaking, although the group taught by specialists was slightly superior in all categories.

The second study, a four-year project conducted cooperatively by the Institute of Communication Research at Stanford University and the Denver Public Schools (Colorado) tests the adequacy of diverse follow-up procedures used in conjunction with language instruction by means of television in the elementary schools as a part of a study to identify the significant instructional variables in televised language instruction. Six groups were used, one receiving televised instruction only; the second having televised instruction only plus directions to watch a re-broadcast of the programs at home; groups 3, 4, and 5 having different kinds of classroom drill in addition to the television program; and the last group receiving the televised instruction plus having the parents join them in watching the re-broadcast at home.

Preliminary progress reports from this yet incompleted research indicate that the three groups receiving drill in the classroom were significantly superior to the other three groups by the middle of the first year, with the group using "eclectic" follow-up procedures ranking highest in achievement.

The third study in this group is that completed last year by the Modern Language Project on the first year of instruction of fourth-grade children in French by television. Inasmuch as the present study is a continuation of this project, the results of the preceding year's research are presented in greater detail.

The fourth-grade classes participating in "The 21-Inch Classroom" of the Massachusetts Executive Committee for School Television viewed an elementary course in conversational French entitled Parlons Français. It consisted of two fifteen-minute programs telecast each week from September, 1959 to June, 1960. Weekly late afternoon programs were telecast for teachers to familiarize them with the content and objectives of the week's children's programs and to provide them with basic drill to develop a familiarity with the new material. The purpose of this study was to appraise the effectiveness of the teacher-training programs by investigating certain of its effects on the skill developed by the children. Briefly, the fluency of the teacher, the transfer effect of the teacher programs, and the kind of practice engaged in were investigated in relationship to the progress made by the children in learning French.

The final sample treated statistically consisted of forty classes of fourth-grade children, naive in French and selected from nine similar suburban communities in the Boston Metropolitan area. The classes were randomly assigned to one of eight categories in a 2x2x2 analysis of variance design. The independent variables consisted of two variations each of instruction, practice, and teacher fluency in French.

The two variations of instruction were television training of teachers by means of half-hour, weekly television programs versus no teacher-training. The two variations of practice experienced by the pupils were teacher-prepared and directed practice versus recorded tapes of the audio portion of the children's television programs. The two variations of fluency were those teachers judged fluent (moderately or better) in pronunciation and usage and those judged to be non-fluent on the basis of specially constructed oral tests.

The effects of these variations upon the achievement of the children were measured at the end of one year's instruction. Each class was viewed as a single case with the score for the class being the mean score on a given test. Effects were measured by a group test of word, phrase, and sentence recognition using matching and multiple choice items. The child selected a drawing to match the words spoken in French. A random sample of children from all the classes was given individual tests of pronunciation, rhythm and intonation, and spontaneous usage. These were rated on a specially developed rating scale.

The significant findings resulting from the analysis of the data were:

1. Within a range from non-fluent to moderately fluent teachers, roughly equivalent results will be obtained on comprehension,

pronunciation, rhythm and intonation, when their classroom work is carried on in conjunction with televised instruction in French by the aural-oral method.

2. The Total Fluency of children (combined score on comprehension, pronunciation, and dialogue) was affected by differences in the fluency of the teacher. The classes directed by moderately fluent teachers obtained statistically significant higher mean scores than those directed by non-fluent teachers.

3. Differences in kind of follow-up practice produced differences in Total Fluency. Practice directed by the teacher, whether by moderately-fluent or non-fluent teachers, yielded higher mean scores than practice based on use of tape recordings taken from the sound track of the television programs.

4. Not only did teacher-directed practice yield better Total Fluency Scores, but it also produced better comprehension of spoken French than did practice based on tape recordings.

5. The televised teacher-training programs did not produce significant differences in the achievement of fourth-grade children in French. On the contrary, when combined with the other two variables - kind of practice and teacher fluency- they produced a negative result as far as pronunciation is concerned. This is to say that moderately fluent teachers directing their own practice (in combination with the televised children's lessons) obtained better results when they did not see the teacher programs. Non-fluent teachers in the absence of the teacher programs obtained better pronunciation with their pupils through the use of tape recordings.

6. Intelligence test score (Otis Beta) was not a good predictor of pupil achievement in French, the correlations in all instances being less than .12.

7. Pupils' rank on overall academic achievement was a better predictor. Statistically significant differences in achievement in French (comprehension, dialogue, and total usage) occurred in comparisons among groups of low, average, and high achievers.

8. Pupils differing in willingness to try -low, average, and high, based on teacher ranking - showed statistically significant differences on nearly all phases of achievement in French (comprehension, dialogue and total usage).

9. Televised instruction alone, without regular follow-up work by the classroom teachers, yielded inadequate levels of achievement particularly in comprehension and spontaneous usage of French.

Experimental Design

The study being reported here, made possible by a grant from the Office of Education of the United States Department of Health, Education, and Welfare through the New Education Media Division under the National Defense Education Act of 1958 was designed to test the effect of three variables on the language achievement in French of fifth grade children during a year's instruction by television. The treatments tested were not variables in the laboratory sense of the word but rather composite aspects of classroom practice. The television programs known as "Parlons Français" were common to all classes.

Briefly stated, forty-five fifth grade teachers whose classes were about to receive a televised instructional course in conversational French were divided as a result of testing into two equal-sized groups designated as "fluent" and "non-fluent". Within these two groups the experimental design was duplicated. Each teacher was randomly assigned to one of four experimental treatments which prescribed whether or not they viewed a televised teacher-training program or practiced with a series of tape-recordings to improve their own fluency, and whether they used tape-recordings as practice materials with their classes or planned and directed their own practice sessions with their classes.

1. Teacher tape-recordings plus teacher-directed practice
2. Teacher tape-recordings plus pupil tape-recordings
3. Teacher TV program plus teacher-directed practice
4. Teacher TV program plus pupil tape-recordings

The effects of these variations upon the achievement of the children was measured by a comparison of gains made from the beginning to the end of the year on a series of tests constructed for the purpose.

Seven suburban communities particpated in the experiment. In designing the experiment, each class was viewed as a single case with the score for the class being the mean score on a given test. The design called for six cases in each cell in the 2x2x2 analysis of variance design. In spite of the fact that several additional classes were carried as part of the experiment in the anticipation that resignations, illness, and other changes would occur, the desired balanced design could not be maintained with the result that cell frequencies were not uniform. Forty-five classes carried out the program and provided the experimental data. Supervision of experimental conditions was maintained by periodic staff visits and by obtaining reports from teachers on their activities and follow-up instruction with their classes.

The Television Programs

The Massachusetts Council for Public Schools supported in the first year by a grant from the Ford Foundation and in the second and third years by grants from the Heath-DeRochmont Corporation in addition to the Title VII, NDEA grant, established the Modern Language Project to create a three-year series of televised French lessons.

The series was developed with the aid of a National Advisory Council of leading educators in modern languages and audio-visual and elementary education. The units consisted of meaningful experiences in the form of conversations, songs, puppet shows, and other activities in keeping with the interests and development level of children in the intermediate grades. Greetings, the seasons, the weather, the days of the week, telling time, clothing, numbers, the family, the home, and French geography were typical of the units studied during the year. The series of programs, called Parlons Français was broadcast as part of "The 21-Inch Classroom", administered by the Massachusetts Executive Council for School Television, utilizing the facilities of WGBH-TV, Channel 2, Boston, for open circuit broadcasts. Some 100,000 children in the 150 participating communities in "The 21-Inch Classroom" viewed the telecasts.

The televised French lessons were fifteen minutes in length and broadcast twice weekly. Each lesson was televised twice. The aural-oral method of instruction was used exclusively. This method differs from the traditional method in that reading and writing are not introduced until children have learned to speak the language correctly and have mastered an adequate stock of words, phrases, and sentences through listening, observing, and understanding the relationship between sound and situation, and using the material in dialogue with others. The transition to reading and writing was postponed until the third year of instruction.

The basic vocabulary consisted of approximately five hundred words presented to teach patterns of speech rather than isolated words. No elements of grammar, literal English translations or written language were ever presented. The most important objectives sought were the quality of the oral language produced and direct understanding and assimilation of French. Each participating teacher was given a Study Guide, prepared by the staff of the Modern Language Project, which contained the lesson contents of the programs and suggestions for the classroom teachers. Each unit consisted of four sections (a) Before the TV Lesson, (b) Lesson Content, (c) Points, and (d) Directions for Follow-up.

The Independent Variables

Teacher Fluency. In the early stages of the project the superintendents of schools in several suburban communities which had participated in the first year study were asked to provide a group of teachers interested in participating in

the research. These teachers were invited to attend a meeting where the details of the experimental study were discussed and questions answered. Following this discussion each teacher who volunteered to participate in the project was asked to fill out a personal record sheet which included routine information about her education, teaching experience, school and community.

Following this, each teacher was given two individual tests. The first test consisted of an oral reading exercise constructed for rating purposes. Teachers with no previous training in French did not read these paragraphs and were automatically rated as non-fluent. The teacher with previous training read into a tape recorder a series of four short paragraphs which were simultaneously rated by two trained raters. The first paragraph was rated for articulation; the second paragraph was rated for rhythm; the third and fourth paragraphs were rated for intonation. The second test was that used to measure the oral productiveness of the children and was rated for the same abilities. (See page 15) for a discussion of the rating scale.

The results of two raters provided a reliability check of the ratings as well as a combined judgment of the accuracy and of the fluency of the teacher. The reliability of the ratings was .91 corrected by the Spearman-Brown formula. The total scores of the two raters were summed to provide each teacher's individual result for fluency. Those teachers whose total was six or higher were assigned to the fluent group. (The term "fluent" actually is used to designate a moderate degree of fluency in this study. Flawless native speech would have been counted 18; well-trained American French would have been 12.) The teachers receiving ratings of five and below were classified as non-fluent.

Teacher Training. Through random assignments, half of the teachers in the study viewed the weekly programs for teachers while the other half were instructed to use tape-recordings to improve their fluency. Both groups were asked to spend one-half hour per week in addition to their classroom work with French. The teacher TV programs were designed to include the same topics as those of the teacher tapes, both being coordinated with the lesson content of the second year "Parlons Francais" series. In addition to the regular lesson content, the TV programs for teachers provided the visual stimulus of the speaker and demonstrations of classroom procedures for use with classes.

A series of tape recordings were prepared for the improvement of teacher fluency in French particularly with regard to the lesson content of the televised children's programs. Each tape consisted of an introduction based on the lesson content of each unit in the Teacher's Guide. The major section of each tape was devoted to a systematic comparison of English and French and the application of a teaching methodology which, through systematic drills, attempted to increase the teacher's knowledge of the structure of the French language and at the same time eliminate those errors of speech caused by the patterns of the teacher's native English.

This included a study of general FLES principles, consonants, vowels, French intonation patterns, vocabulary, pattern practice, idioms and some information on French culture.

Practice. Two variations of practice were provided for in the experimental design. The first consisted of tapes to be used in the classroom with the children. The tapes were prepared and recorded by members of the Modern Language Project staff. Each tape was based on the lesson content of a single unit and was divided into two sections, lesson content and classroom procedure, each associated with comparable sections in the Teacher's Guide. The teacher received guide sheets with each tape which provided the complete printed French text of the material on the tape as well as instructions on how to present and use the material with the children. The introductory section included a list of props and preparatory materials required to make the content of each tape more meaningful to the children. Step-by-step procedures were described as to use of the tape. The procedures utilized were varied to maintain a high level of interest and suitability to material. Included were chain practice, dramatic dialogues for children's enactment, identification of objects, number problems, following commands, answering questions, and straight repetition.

The recorded materials which were developed had a utilitarian function. The results of the first year research showed that classroom follow-up was an important element in language achievement. The fifth-grade teachers were no more fluent than the fourth, yet they were faced with the task of providing practice for children who had completed approximately thirty hours of instruction, counting both TV and classroom practice during their first year. If effective recorded materials could be developed which utilized teacher strengths and minimized their lack of fluency, they would be an important adjunct to the televised lessons. With both forms of practice, the teachers were asked to provide thirty to forty minutes of practice per week in addition to the televised lessons. Two playings of the recordings provided this amount of practice, although at various times the teachers preferred to provide several repetitions on certain sections of the tape to a single play-through.

In the groups in which the practice was planned and directed by the teachers, the children were restricted by the teacher's level of fluency and the quality of her pronunciation. Additional materials and more advanced exercises and activities for the more fluent teachers were also included in the Study Guide. In designing the experiment it was anticipated that while these teachers might not attain the same level of pronunciation with their classes, the greater flexibility provided them would result in greater fluency in spontaneous usage of French, in contrast to the more accurate pronunciation, rhythm, and intonation of the classes using the tapes. In both groups the amount of practice was the same - two additional practice periods, plus any spontaneous usage incorporated in the activities of the school day.

The Control Variables

Intelligence. In the results of the first-year study reported previously, it was observed that intelligence as measured by the Otis Beta showed a very low correlation with the achievement of children when the instruction was audio-lingual. Secondly, by virtue of the fact that the same schools and communities were being used as had participated in the previous study with only small differences observed between the mean intelligence of classes, the intelligence testing was not repeated during this second-year study. The mean intelligence of classes participating in the first-year study was 109 and would be comparable for the current study.

Bilinguality. In view of the French-Canadian backgrounds of residents in certain communities in Eastern Massachusetts, it was essential to eliminate any classes from such communities from participation in the research study. Undoubtedly a considerable exposure to the French language in the homes of these children, in their churches, and in the community as a whole would result in acquaintance, comprehension, and possibly direct fluency in the language. The mere absence of ability to speak the language would not insure a lack of ability to understand spoken French and with it a probable accelerated rate of learning in the classroom situation. Hence the classes chosen for the study were selected from monolingual communities.

Prior training in French. Even in monolingual areas the possibility existed that certain children, by virtue of prior residence or schooling, could have some degree of fluency in French. While an occasional child would not be expected to significantly affect the results of classes, any class with a cluster of such children could reasonably be expected to show a different rate of progress. Therefore, a questionnaire was devised to determine whether any classes had a preponderance of students with a previous knowledge of French. The results of the preliminary screening of all classes revealed that only isolated children had any knowledge of French, however rudimentary.

Teacher Motivation. As mentioned previously, with the cooperation of the superintendents of schools, meetings were scheduled with teachers. At these meetings the study was explained in detail to the teachers and their role clearly defined. Nearly all of the teachers who attended these meetings signified their desire to take part in the study. With the participation in the study being voluntary, the assumption was made that, in general, the group of teachers involved were positively motivated. Random assignment of teachers to experimental category presumably provided a comparable range of interest within the specific categories.

Teacher Experience. A comparison of the non-fluent and fluent groups of teachers with respect to years of teaching (Table 1) shows the two groups to be roughly comparable.

Table 1

Years of Teaching Experience of Participating Teachers

No. of Years	Non-fluent Group	Fluent Group
20 up	4	5
11-19	3	3
6-10	3	3
2-5	10	7
0-1	4	3
Total	24	21

Although similar in amount of teaching experience the two groups differ in the amount of prior training in French. Assignment was based on tested fluency only, without knowledge of prior training; hence, the observed difference constitutes a validation of the fluency measure. The difference between the two groups results mainly from the amount of college instruction. In addition several of the fluent teachers had recently completed some private instruction. Only four of the non-fluent group and none of the fluent group were completely naive in French.

Table 2

Years of Instruction in French of Particpating Teachers

	Non-Fluent Group			Fluent Group		
No.of Years	High School Level	College Level	Total	High School Level	College Level	Total
6	0	0	0	0	0	0
5	0	0	0	0	0	0
4	1	0	1	3	2	5
3	4	0	4	9	1	10
2	14	0	14	6	3	9
1	1	4	5	2	4	6
0	4	20	24	1	11	12
	Mean 2.0 Years			Mean 3.5 Years		

The teachers were not only different in years of instruction in French but in their tested proficiency as well. The oral reading test which was administered and rated for pronunciation, rhythm and intonation possessed a demonstrated validity coefficient of .55 (point biserial) between score and years of instruction.

Socio-economic differences. Seven suburban communities in the Boston Metropolitan Area were invited to participate in the study. In selecting the communities a deliberate effort was made to select a comparatively homogeneous group of communities as far as socio-economic circumstances were concerned. This is not to deny that in each community there exists a range of social strata from lower to upper class as shown by available surveys, but

rather to indicate a modality which would fall in the middle class. All of the communities exceeded ten thousand in population, with six of the seven falling between ten and forty-five thousand. All of the communities fell above the median of towns (greater than five thousand in population) in the tax base per child. The property valuations per child ranged from nine thousand dollars to sixteen thousand. Knowing that valuations are at best a crude index of wealth in a community because of variations in tax assessment practices, a second index available was per capita expenditure for schools. A review of these latter statistics for the seven communities participating in the study shows the communities to be somewhat more homogeneous and slightly above average in support of education.

It is difficult to infer the exact significance of this arbitrary selection of communities for the generality of experimental results obtained in the study. An effort to select a random sample of classes from the more than 1250 fifth grade classes receiving the telecasts presented three major difficulties: (a) the problem of bilingual communities, (b) the diffusion of the sample in terms of socio-economic differences, and (c) the need of controlling differences between rural, suburban, and urban areas with respect to representation in the sample. An analysis of variance design with six cases (classes) present in each cell would encounter difficulty with regard to the representativeness of each of the cases, were they spread over rural, suburban, and urban communities. It is clear that higher per capita expenditure reflects higher teacher salary and presumably a greater degree of training and/or competence in teaching. Secondly, families in suburban communities would be more likely to endorse the introduction of a foreign language in the elementary school and encourage the children's interest in acquiring facility. Nevertheless, considering the fact that the instructional program depends upon the telecast as a base, and further, considering the elementary nature of the program content (vocabulary and sentence structure), there is no reason why the accomplishments of the classes that were found in this study could not be duplicated in any community where the programs were available and the teaching staff interested. A partial replication of the first-year study in public and parochial schools in Boston proper showed comparable achievement.

The Dependent Variables.

Four aspects of spoken language were selected for measurement: (a) pronunciation, (b) fluency, (c) spontaneity, and (d) comprehension of spoken language. The first three were combined into an individual test; the fourth was developed as a group test.

Pronunciation. The ability to pronounce characteristic French sounds correctly.

Fluency. The ability to speak the language in the manner characteristic of the native speaker. Fluency is dependent on combining pitch variation, rhythm, stress, loudness, and duration of sound in appropriate manner. The two aspects chosen for rating in view of their significance for French were rhythm, the ability to speak at the correct rate and tempo; and intonation, defined as the ability to vary pitch and stress within a sentence in characteristic style.

Spontaneity. The ability to express oneself spontaneously in French in a dialogue, responding orally to questions asked by the examiner.

Comprehension. The ability to understand French vocabulary expressed orally as words, phrases, and sentences.

Development of Individual Test. Inasmuch as accuracy of pronunciation of French sounds and authentic expression in French were included in the objectives of the television instructional program, it was necessary to devise procedures for evaluating pupil performance in these phases of language achievement. Two problems existed with respect to such evaluation. The first was to identify those elements of language which could be reliably discriminated; the second to develop a scoring procedure. Four possibilities existed with respect to these related problems. The first was an analysis by means of a simple rating scale of the elements of spoken language: articulation, rhythm, stress, and intonation, using Delattre's work as a guide. Correctly spoken French is dependent on appropriately combining correctly expressed sounds in characteristic rhythm, with stress and intonation achieved by means of duration of sound and pitch properly managed. The development of a simple rating scale which could be reliably used by trained judges seemed possible. A second possibility lay in rating the degree to which the child's expression duplicated or approximated the model. The use of a model controlled the response of the child but provided no gauge of spontaneous usage of the language. The latter of the two procedures had the inherent problem of control of drift of the ratings - the tendency to shift the anchoring points of the rating scale. Both of these procedures were utilized, duplication of the model with pronunciation and a graphic rating scale with rhythm and intonation. A third procedure considered was to take a sample of children's expressions, scale them in a rank order, and rate each individual against this scale. Although this procedure seemed functional with small numbers of ratings and/or untrained judges, it was too cumbersome for

use on this project and failed to offer the promise of greater reliability or validity of rating. The final possiblity was that of electronic analysis, either through production of the test responses in a graphic form which could be compared with a model, or directly through programmed analysis. An investigation of this procedure indicated that it was not feasible at this stage of computer development.

In completing the first year's research for the Modern Language Project a simple scale had been developed for rating fluency in French. This scale incorporated three characteristics of oral speech: articulation, rhythm and intonation, the last combining accent and pitch. Two other characteristics of language, loudness and duration had been rejected as being less significant and difficult to rate.

Articulation. The particular sounds characteristic of French are easily identified. Many standard French grammar texts describe them. The writers used Delattre's list as a basis for analyzing the vocabulary of the lessons in contructing the Articulation section of the Individual Test.

Rhythm. This is the tempo or meter at which sounds are produced. The main speech rhythm of English is due to the unevenness of its syllables. An English sentence is heard as a succession of loud, intense syllables separated by varying numbers of much weaker ones. In French the syllables are all of about equal loudness. The main rhythm is heard as a succession of equal syllables with a slightly more prominent one at the end of each sense group. It recalls the rhythm heard in English when one is counting: 1-2-3-4.

Intonation. This was defined as the combination of variation in pitch and stress characteristic of French speech. were instructed to listen mainly to the melody of the sound, the rise and fall of pitch, and secondarily to the stress obtained at the end of sense groups by variation in pitch and duration of sound.

The weakness of the procedure adopted for rating the pronunciation, rhythm and intonation in the first year scale lay in the fact that the child repeated after a model. The oral production being rated was a combination of the child's regular usage plus his ability to imitate the model. Steps were taken to extend the scale to include ratings of his natural usage in these respects by rating his responses in the dialogue situation for rhythm and intonation.

The final section of the individual test consisted of a series of questions designed to test the child's spontaneous usage of French. Utilizing questions taken from the lesson content, the responses of each child were rated for completeness and grammatical correctness of response, as well as for rhythm and intonation by means of a re-rating on these aspects of speech.

The final instrument (Appendix A) for rating fluency in French and the rating scale was as follows:

Pronunciation.

Objective: To measure the accuracy of the phonetic characteristics of French sounds

Format: This test consists of twenty spoken French words recorded on tape by the TV teacher. The child is asked to repeat the word in French exactly as he hears it. His responses are recorded on a second tape recorder.

Test Items: Mademoiselle	Madame
une bille	le livre
Monsieur	la porte
une heure	les murs
un cahier	une maison
un avion	le fermier
le mouchoir	Maman
américain	la rue
les enfants	Bon
vos cheveux	aujourd'hui

Scoring: The response is rated either correct or incorrect (0 or 1) on the basis of the accuracy of the pronunciation of the sounds being rated (the underlined section of the word).

Rhythm.

Objective: To measure the evenness of rhythm as a succession of equal syllables

Format: Six sentences were recorded on tape by the TV teacher. The child is asked to repeat the sentence in French exactly as he hears it.

Test Items: Le tambour est à moi
Il fait beau aujourd'hui.
Pierre est sage en classe.
Je mets mon pantalon gris.
Il s'appelle Jean.
Donnez-moi le livre s'il vous plaît.

Scoring: Each response is rated on a scale from zero to three depending on the evenness of the beat of the sentence.

Rate 0: Broken, halting expression on words spoken as separate units

Rate 1: Irregularities occur in rate of expression. Occasional breaks occur between words or phrases which are not at points of stress. Expression is at a regular but slow rate.

Rate 2: Uniform, even rate of expression; equal time given to each sound. Expression flows smoothly and at characteristic rate of speed.

Rate 3: Native rhythm and facility

Intonation.

Objective: To measure the proficiency of both accent and intonation as demonstrated by duration and correct pitch variations

Format: Eight sentences were recorded on tape by the TV teacher. The directions are the same as those for Rhythm.

Test Items:

La sucette est rouge.
Voilà un drapeau américain.
Mon chat s'appelle Minet.
A qui est ce chien noir?
Qui veut cacher le mouchoir?
L'agent de police cherche mon lapin.
Dessinez un poisson.
La bicyclette est pour moi?

Scoring: The scoring is rated basically the same as in Rhythm, using a zero to three basis.

Rate 0: Variations in pitch occur which lack any pattern or follow an English pattern of rhythmic pauses. Accents words by increases in volume.

Rate 1: Speaks in monotone. Flat, colorless expression with little or no variation in pitch.

Rate 2: Generally rising pitch in declarative sentences. Widest variation in pitch at end of sense group, but lacks greater duration on last syllable.

Rate 3: Authentic accent obtained by desired melodic pattern with stress obtained by greatest variation in pitch and duration at the end of sense groups.

Spontaneous Usage:

Objective: To measure proficiency in conversational skill, the ability to respond in French to French questions

Format: The child is asked a series of questions in French by the examiner. He is told to answer each question in French with whole groups of words.

Test Items:

Comment vous appelez-vous?
Quel âge avez-vous?
Quel jour est-ce aujourd'hui?
Quel temps fait-il?
Combien de frères avez-vous?
Combien font quatre et cinq?
De quelle couleur est le drapeau américain?
Quelle est la capitale de la France?
Où est la tour Eiffel?
Est-ce que Paris est au nord?
Où habite le président des Etats-Unis?
Quelle est la capitale des Etats-Unis?
En quelle saison sommes-nous?
En quelle saison allez-vous nager?
Quel temps fait-il en hiver?
Vous faites du patin en hiver?
Il fait chaud en été?
A quoi jouent-ils?

Scoring: Ratings were given in the zero to three range as before.

Rate 0: No response or a completely erroneous response.
Rate 1: If reply is a word or phrase but not a sentence.
Rate 2: Sentence with word missing; error in number or tense; comprehension correct, but reply in error.
Rate 3: A complete sentence, no errors, correct comprehension

Ten sentences were rated for spontaneous rhythm and intonation, using scale described above.

Validity of the Individual Test. Of the total universe of four hundred words contained in the lessons for the first year of Parlons Français, approximately one hundred were included in the individual test. Eleven new questions from the second-year content were added. This is of less significance than the fact that the items and questions were selected to sample as many lessons as possible during the first two years and the structural elements which they contained. Experts on the staff of the Modern Language Project reviewed the items for their appropriateness and suitability and final selections were made on the basis of their judgments.

Training of raters. In addition to the writers, four area coordinators of the Modern Language Project Staff cooperated in rating the tapes of the oral language of the children in the study. The coordinators were either native French teachers or teachers who have taught as French specialists in FLES programs. Tape recordings from the first year study were used to train the staff in the administration and scoring of the test and to obtain inter-rater consistency in the use of the rating scale. The usefulness of the scale is dependent upon trained personnel if the obtained results are to be comparable. Theeffects of training are to clarify the particular aspect of language being judged in each section and to reduce inter-rater variability to a minimum.

Reliability of Individual Test. The reliability of the Individual Test was based on three sets of correlations: the reliability of the rating scale (inter-rater reliability), rater reliability, and reliability of the test itself. Rank difference inter-rater correlation between the junior author and the other raters of the children's fluency ranged from .67 to .94 with a mean correlation of .81. Rater reliability obtained by a second rating of the same group of children after an interval of a fortnight yielded a rank difference correlation coefficient of .86. The reliability of the instrument itself was obtained by computing a rank-difference correlation based on an odd-even item split-half score. This correlation was .88 for the total score and .83 for the score exclusive of the dialogue section. Judging from the coefficients just reported, the rating scale was deemed to be adequate for the purposes intended

Development of Group Test. In addition to the individual test of language usage, a group test was constructed to measure comprehension of Spoken French. The essential task faced by the child was to select a picture which corresponded to a statement made in French by the examiner. All items used were multiple choice.

The group test consisted of three types of items:

1. recognizing the meaning of sentences spoken in French,
2. telling time expressed in French, and
3. recognizing numbers.

In the first section of the Group Test (See Appendix B) the child was presented with three pages of pictures. Each page consisted of four related, complex pictures:

Page 1 - Pictures relating to Spring, Summer, Autumn and Winter with related activities shown
Page 2 - Four scenes of store
vities
Page 3 - Four family scenes

A series of statements in French were read aloud to the class. Each page of pictures permitted a number of statements with the total for all three pages being 34 statements. In each instance the child was instructed to listen to the sentence which was repeated once, to select the matching picture, and mark his IBM answer sheet accordingly.

The second and third sections of the listening comprehension test were similar in that the items (clock faces and numbers) were printed on the IBM answer sheet (Appendix C) and the child was instructed to mark the particular answer which coresponded to the time or number he heard read aloud.

The difficulty and discrimination levels of each item were analyzed with the test score as criterion following an administration of the test to several classes of children in their third year in a FLES program in North Attleboro, Massachusetts which were made available to the project by their instructor, Miss Jacqueline Gadoury. Items were analyzed by the standard procedure using the top and bottom 27% of the group. Those items which discriminated at the 5% level or better were retained. At this point, the number items appeared of borderline value with several not discriminating.

A second item analysis was completed on the experimental classes to check item validity. With the exception of three items, all items discriminated at the 5% level or better, with the number items proving equally satisfactory.

Reliability of the Group Test. A split-half reliability coefficient was computed for the listening comprehension test on each of four classes. The mean correlation corrected by Spearman-Brown was .90. The reliability coefficients obtained are similar to those obtained in the development of the first year test. The estimate of reliability of the first year test was based on Kuder-Richardson formula #20 was .84. A test - re-test reliability coefficient (one-week interval) of .85 was obtained for this test.

ANALYSIS OF DATA

Forty-five classes totalling some 1300 fifth-grade pupils from seven suburban Boston communities are represented in the analysis of data. Certain practical exigencies affected the collection of data. Needing a pre-test of achievement in French, the first-year tests were utilized. Although it was known that the listening comprehension test to be constructed for the second year would probably be a more adequate measure, inasmuch as it would sample some of the first year content as well as the second-year content, it was impossible to develop this test until the lesson content for the second year was established. This material was not completed until December preventing the development of the second-year tests until after that time. The second condition was a number of tests to be administered in the pre-test period. A 25% sample of experimental population required individual testing, with each test lasting one-third to one-half hour. In order to facilitate the completion of the pre-testing before the televised lessons began, half of the classes in the experimental group were selected from those participating in the study completed the previous year. Each class had a new teacher whose fluency was tested. The other half of the classes were "new" in that the majority of the children in these classes had not participated in the previous year's study. Each of these classes was tested in the fall whereas the end of year tests given the previous June were utilized as the pre-test data for the "old" classes.

The common practice of interchanging pupils between classes at the time of promotion in schools having more than one class at a grade level meant that June and September data was available on a number of pupils in the "new" classes. A comparison of the test scores of these children indicated that the two groups of classes could be treated as comparable and combined into a total group. In the final analysis of the data both groups were analyzed separately and as a total.

Independent Variables. The following three variables constituted the treatments in the present study:

1. Teacher fluency - Fluent vs. non-fluent
2. Teacher training - Teacher television programs vs. tape-recordings for teachers
3. Kind of classroom practice - Teacher directed practice vs. tape-recordings for pupils

Each pair of these variables were tested in a series of simple analysis of variance against each of the scores on the dependent variables.

In addition to the experimental conditions, samples of children could be assembled who had received two consecutive years of a particular treatment, i.e., fluent vs. non-fluent teachers, and teacher directed practice vs tape-recordings, and the achievement of these children at the end of the second year was compared.

Dependent Variables. Test scores and ratings were available on the following:

1. Listening comprehension. The first year group test was administered as both pre-test and post-test providing a gain score for the year. The second year group test was administered at the end of the second year providing a measure of achievement at the end of two years of instruction combining televised lessons with follow-up by classroom teacher.

2. Pronunciation. The pronunciation section of the rating scale of oral production in French was administered at the beginning and end of the year.

3. Rhythm and Intonation. These sections of the same rating scale were administered at the beginning and end of the year.

4. Dialogue. This section of the rating scale was administered at the beginning and end of the year. In addition, the range of questions was extended to incorporate second-year material providing a second, end-of-year score.

5. Spontaneous rhythm and intonation. The child's responses to the questions in the second-year dialogue section were rated by the scale described earlier. The rating obtained in #3 is rated following a model. The rating obtained to the child's responses to questions provided a measure of his rhythm and intonation in the absence of a model.

6. Two combined scores were utilized; 1. the total gain score obtained from the difference in scores from pre-test to post-test listening comprehension and oral production, and 2. the total score at end of the second year, called "total usage" since it combined the score on listening comprehension with oral production in a dialogue situation.

Results: Table 3 presents the mean scores of each class on each of the second year tests by experimental treatment. Each class is considered as a single individual in the treatment of data with the mean score becoming the score for the class. In addition, mean scores by category are reported. The most obvious condition within the table is the wide variation within experimental category. Although certain differences between conditions appear and loom large in comparison, the within cell variance is so great as to render the differences statistically non-significant. For example, within the classes taught by fluent teachers, those receiving practice organized and directed by the teacher, show a mean score some eighteen points higher than those using tapes. Considering the magnitude of the class means, such a difference appears significant. In contrast, the use of tape-recordings by non-fluent teachers appears preferable in view of the ten point difference in mean scores.

A common practice in many educational studies is to use the number of children as the N in testing the significance of differences. Were this done the observed differences would undoubtedly have reached statistical significance. The dubious validity of this procedure is evident when one inspects the class means in any category and observes the marked difference between individual classes indicating consistent effects associated with differences between teachers rather than differences in experimental treatment.

The analysis of variance performed on each of the scores available for each of the dependent variables showed no significant F ratios for the total group.

Tables 4 and 5 report the F values obtained when the fluency of teacher and the kind of practice utilized for two consecutive years are compared. The statistical test in this instance is equivalent to a simple test of a difference in means. Those children for whom complete data were available, i.e., both group and individual tests, and who had had two consecutive years with either a fluent or a non-fluent teacher, or as shown in Table 5, two consecutive years of tape-recordings for practice or teacher-directed practice were grouped and their achievement compared.

At the end of the first year study no significant differences occurred on individual test scores, although slight but non-

significant differences existed in favor of the more fluent teachers. A combined score of listening comprehension, pronunciation, and dialogue did show a statistically significant difference in favor of the more fluent teachers.

By the end of the second year statistically significant differences on separate tests are observed associated with the fluency of the teacher. All but one of these differences are in favor of fluent teachers. The F value of 7.15 on gains on pronunciation favored non-fluent teachers. The writers are prone to question the reliability of the difference because of the proximity of the mean scores to maximum score on this section of the instrument. On all three of the end-of-second year tests and on the combined score of these tests, those children who had received classroom practice under the direction of a more-fluent teacher showed significantly greater scores.

TABLE 3

MEAN SCORES BY CLASS ON DEPENDENT VARIABLES IN RELATION TO EXPERIMENTAL ASSIGNMENT

TRAINING	Teacher Directed Practice					Pupil Tapes				
	Class	Comprehension	Dialogue	Rhythm+Inton.	Total Usage	Class	Comprehension	Dialogue	Rhythm+Inton.	Total Usage
FLUENT TEACHERS										
TEACHER TAPES	11	17.0	22.6	30.0	69.6	21	20.0	10.2	15.4	45.6
	12	17.4	10.3	15.1	42.9	22	21.0	30.8	36.0	87.8
	13	17.8	28.2	33.2	79.2	23	16.7	9.7	17.8	44.2
	14	25.1	30.7	30.2	86.0	25	19.2	24.4	31.2	74.8
	15	22.0	31.1	45.0	99.6	26	14.4	7.2	6.8	28.2
	16	18.1	18.4	29.7	66.4					
	MEAN	19.6	23.6	30.5	73.9		18.3	16.5	29.4	56.1
TEACHER TV	31	17.4	16.0	19.4	52.8					
	32	26.3	38.5	51.8	116.5	41	15.7	9.9	8.9	34.3
	33	19.4	29.6	40.2	89.2	42	21.8	30.0	34.2	86.0
	34	22.9	29.4	43.4	95.4	44	29.0	43.8	54.2	127.0
	35	18.7	17.9	23.1	59.7	45	16.0	9.2	12.3	37.5
	36	22.6	40.0	53.6	116.2					
		21.2	28.6	38.6	88.3		20.6	23.2	27.4	71.2
NON-FLUENT TEACHERS										
TEACHER TAPES	51	14.2	4.0	4.4	22.4	61	21.0	35.7	44.7	101.3
	52	19.2	31.5	42.8	93.5	62	24.7	32.5	39.7	96.8
	53	15.5	16.5	25.5	57.5	63	19.4	24.6	28.5	72.5
	54	19.4	18.4	32.4	70.3	66	14.4	24.0	38.7	77.1
	55	13.0	8.6	13.4	35.0	67	13.7	18.3	28.9	59.9
	56	22.0	27.4	32.5	81.9					
		15.6	17.7	25.2	60.1		18.5	27.0	36.1	81.5
TEACHER TV	81	18.3	28.2	33.5	80.0	71	27.1	33.9	42.4	102.9
	82	14.1	12.1	10.0	36.3	73	26.0	26.4	29.8	82.2
	83	18.6	20.8	29.0	68.5	74	11.7	2.5	1.8	16.0
	84	11.9	3.3	3.1	18.3	75	15.0	14.2	22.8	52.0
	85	14.0	12.8	18.8	45.5	76	17.1	23.4	32.3	72.9
	86	18.9	26.9	47.0	92.7	77	20.0	21.9	24.7	66.5
	87	27.3	36.8	44.8	109.0					
		17.6	20.1	26.6	64.3		19.5	20.4	25.6	65.1

TABLE 4

ANALYSIS OF VARIANCE OF DIFFERENCES BETWEEN PUPILS HAVING FLUENT AND NON-FLUENT TEACHERS FOR TWO CONSECUTIVE YEARS.

Dependent Variable	Variance		df	Mean Square	F Value
1. Gains on First Year Listening Comprehension Test	between	21.1	1	21.1	.75
	within	2015.5	72	28.0	
2. Gains on Pronunciation	between	38.6	1	38.6	7.15**
	within	418.4	78	5.4	
3. Gains on Rhythm and Intonation	between	52.8	1	52.8	.65
	within	6335.4	78	81.2	
4. Total Gains Pre-test to Post-test (Σ 1-3)	between	24.2	1	24.2	.18
	within	9880.9	72	137.2	
5. Listening Comprehension Second Year Test	between	291.3	1	291.3	7.19**
	within	2834.0	70	40.5	
6. Dialogue-Second Year	between	1417.3	1	1417.3	9.62**
	within	10311.7	70	147.3	
7. Spontaneous Rhythm and Intonation -Second Yr.	between	1974.2	1	1974.2	6.89**
	within	20070.9	70	286.7	
8. Total Usage (Σ 5-8)	between	9830.3	1	9830.3	8.59**
	within	80121.7	70	1144.6	

** Significant at .01 level of confidence.

TABLE 5

AN ANALYSIS OF VARIANCE OF DIFFERENCES BETWEEN PUPILS HAVING TEACHER DIRECTED PRACTICE AND THOSE USING TAPE RECORDINGS FOR TWO CONSECUTIVE YEARS

Dependent Variable	Variance		df	Mean Square	F Value
1. Gains on First Year Listening Comprehension Test	between	68.6	1	6.86	
	within	2596.9	76	3.42	2.01
2. Gains on Pronunciation	between	741.9	1	741.9	
	within	9304.7	76	122.4	6.06*
3. Gains on Rhythm and Intonation	between	9.0	1	9.0	1.88
	within	413.0	86	4.8	
4. Total Gain, Pre-test to Post-test (Σ 1-3)	between	344.2	1	344.2	4.43*
	within	6683.3	86	77.7	
5. Listening Comprehension Test Second Year	between	0.0	1		
	within	3990.8	83	48.1	.00
6. Dialogue -Second Year	between	236.0	1	236.0	1.45
	within	13473.2	83	162.3	
7. Spontaneous Rhythm and Intonation Second Year	between	877.2	1	872.2	2.85
	within	25529.7	83	307.6	
8. Total Usage (Σ 5-8)	between	2004.1	1	2004.1	1.65
	within	100722.3	83	1213.5	

* Significant of .05 level of confidence.

Table 6

Intercorrelations of Measures at End of Second Year of Televised French Instruction.

(N is 186; all children for whom complete data was available)

Variable	Intercorrelation with variable 1	2	3	4	5	6	7
1. Intelligence (Otis Beta Score)	1.00	.57	.27	.25	.33	.35	.35
2. General Academic Achievement **		1.00	.55	.32	.35	.32	.35
3. Enthusiasm -effortes			1.00	.39	.38	.35	.39
4. Listening Comprehension				1.00	.73	.62	.77*
5. Dialogue					1.00	.90	.97*
6. Fluency (Rhythm and Intonation)						1.00	.96
7. Total Usage (Sum of scores on #4, 5, 6)							1.00

* Intercorrelations are spuriously high by virtue of part-whole correlation.
** Teachers ranked pupils into top quartile, middle half, and bottom quartile of class on general academic achievement and willingness to try to speak French.

The intercorrelations in Table 6 present some interesting data. In comparison with the first year study in which the intercorrelations between intelligence and tested performance in French were all less than .12, the intercorrelations in this instance are greater and statistically significant. Parenthetically it should be noted that on a partial replication of the first year study in an urban area with different teachers and pupil population, the low correlations between intelligence and French achievement were duplicated. Apparently and this would be consistent with knowledge of language achievement, the longer the time span the greater the differences in achievement associated with achievement. It is interesting to note that the correlation between intelligence score and general academic achievement (1,2) is of the magnitude commonly found, yet the correlation with language achievement runs lower, at least during the first two year period. The correlations between general academic achievement and effort with French achievement are similar to that reported for the first year study. The correlation of .55 between the two is a measure of the independence(or lack of it)of the two variables. Inasmuch as both were rankings made by the teacher some halo effect was to be feared.

The observed correlation indicates sufficient independence to justify both being reported. Listening comprehension continues to show important correlation with oral production skills and the correlations of .73 and .62 (4,5 and 4,6) respectively. Although in each case, ten separate responses to questions were scored - the dialogue score representing a correctness and completeness of response and the fluency being the rating of rhythm and intonation, the correlation between listening comprehension and dialogue may be inflated by the influence which errors in understanding the question could have had on responses given.

Summary and Conclusions

Forty-five fifth-grade classes participating in "The 21" Classroom" of the Massachusetts Executive Committee for School Television viewed the second year of Parlons Francais, a televised foreign language program for elementary schools utilizing an audio-lingual method of presentation. It consisted of two fifteen-minute programs telecast each week from September, 1960 through June, 1961. Weekly late afternoon programs were telecast for teachers to familiarize them with the content and objects of the week's children's programs and to provide them with basic drill to develop a familiarity with the new material. Briefly, three variables were investigated, the fluency of the teacher conducting follow-up practice, the transfer effect of teacher training, and the type of follow-up practice.

Procedure. Forty-five classes of fifth grade children who had completed one year of instruction in televised French were selected from seven suburban Boston communities. The classes were randomly assigned to one of eight categories in a 2x2x2 analysis of variance design. The independent variables consisted of two variations each of teacher instruction, practice, and teacher fluency in French. The two variations of teacher training were half-hour television program for teachers described above, compared with specially developed tape-recordings for teacher training requiring the same amount of time. The two variations of practice experienced by the pupils were teacher prepared and directed practice versus tape-recordings prepared by the staff of the Modern Language Project for each lesson. The two variations of fluency were those teachers judged fluent (moderately or better) in pronunciation and usage with those judged to be non-fluent on the basis of specially constructed oral tests.

The effects of these variations upon the achievement of the children were measured at the end of the second year of instruction. Each class was viewed as a single case with the score for the class being the mean score on a given test. Effects were measured by two group tests of listening comprehension involving the matching of a picture with a sentence spoken in French. The first year listening comprehension test was used for pre and post-test purposes to measure gains made during year. A second listening comprehension test covering the lesson content of the second year was developed and administered at the end of the year. The listening comprehension test was administered to all children. A 25 per cent sample was administered an individual test of oral production at beginning and end of year which provided ratings of pronunciation; rhythm and intonation following a model; dialogue, measuring correctness of responses to questions and ratings

of rhythm and intonation.

A series of simple analyses of variance were made of the effects of the independent variables. In addition, the effects of kind of practice and fluency of teacher were analyzed for groups of children who had received two years of uniform treatment, e.g., fluent classroom teachers during both years, tape-recorded practice both years,etc.

Findings. The significant findings resulting from the analysis of the data were:

1. Within a single year, teachers ranging from non-fluent to moderately fluent obtained roughly equivalent results on comprehension, rhythm and intonation, and dialogue, when their classroom work was carried on in conjunction with televised instruction in French by the aural-oral method.
2. Over a two-year period, statistically significant differences were observed in favor of moderately fluent teachers, when the classroom work was carried out for both years by a moderately fluent teacher compared with a non-fluent teacher.
3. Tape-recordings may be used to provide achievement comparable to that obtained by teachers directing their own practice in classes in which the follow-up work is carried out by either non-fluent or moderately fluent teachers. There is some indication that the tape-recordings may be preferable with non-fluent teachers, although the size of the difference is non-significant when compared to within group variation.
4. Compared with the results of the previous year's study, wherein teacher directed practice showed superiority to practice provided by tape-recordings made from the sound track of the television programs, the specially prepared tape- recordings are preferable by virtue of the absence of a significant difference.
5. The form of practice provided teachers for developing their own fluency (television programs vs. tape-recordings) provides little difference in fluency of children. Tape-recordings permit greater flexibility both as to time and repetition but are more dependent upon individual volition.

The finding resulting from the previous year's study that televised instruction alone without appropriate follow-up practice by the teacher is largely ineffective finds additional support in staff observation during the present study and in the class by class variation within the respective treatments. Teacher interest and motivation appear as

significant as teacher skill in follow-up activity. Although no specific test is available in this study, informal ratings of teacher follow-up correlate with tested performance of class. Although measurable differences exist between classes taught by fluent and non-fluent teachers and those using tapes compared with teacher organized follow-up, the within group variance is so great as to render the differences statistically non-significant. Yet this within group variance is at once the bane and the promise of the use of audio-visual materials in conjunction with non-specialist teachers in an elementary school foreign language program. Granted that no comparison is available in this study with classes taught by a FLES specialist, evaluation by competent authorities of typical classes in this program indicates adequate learning of the foreign language. The variability between classes suggests that an instructional program such as described in this study may be either highly successful or ominously failing, depending upon the energy, enthusiasm, and instructional skill with which the follow-up is conducted in the classroom. A review of the mean scores in Table 3 which shows listening comprehension and fluency in an interchange between examiner and student shows that either teacher-directed practice or tape-recordings may be used with success. The observation of the writers is that communities in which the program had decisive administrative support and teacher interest the program was generously successful, but where administrative support was half-heartedly taken and teacher interest was low, performance of classes was more uncertain. Undoubtedly, consistent follow-up is a major consideration, inasmuch as a further finding not reported in the previous year's study indicated that classes which averaged 35 or more minutes follow-up work uniformly scored in the upper half of classes in listening comprehension. In those classes averaging less, performance ranged from low to high.

The flexibility indicated in type of follow-up and the possibilities of successful learning in classes conducted by non-specialist teachers provides school administrators with an opportunity for maximizing the talents of a FLES specialist. Supervision, demonstration, and training would seem to be more important assignments for a FLES specialist than direct teaching of children. In view of the known shortage of FLES specialists in relation to demand, this opportunity to make maximum use of specialized talent is significant.

This training need is underscored by the statistically significant differences appearing between classes conducted by more fluent teachers over a two-year period. In addition, consideration must be given to the fact that a non-fluent or moderately fluent teacher can operate more

effectively with beginning groups, but with each successive year of foreign language training, even though each year may include a bare thirty hours of instruction in the language, the next teacher finds himself at a greater disadvantage vis-a-vis the class. If children in elementary school are to have equal and adequate opportunity to begin a second language, regular provision for in-service training is necessary.

APPENDIX A

Individual Test Oral Expression	Teacher: Child: School:	Pronunc. ☐☐ Pron. ☐ Rhy. Int. ☐☐ Rhy. ☐ Total ☐☐ Inton. ☐
Date: Rater:	Tape # Begin: ☐☐☐ End: ☐☐☐	

Pronunciation: Score as right (1) or wrong (0) if close to tape-recorded model or not.

	0	1		0	1		0	1
Mademoiselle			le mouchoir			les murs		
une bille			Américain			une maison		
Monsieur			les enfants			le fermier		
une heure			vos cheveux			Maman		
un cahier			Madame			la rue		
un avion			le livre			Bon		
			la porte			aujourd'hui		

TOTAL ☐☐

RHYTHM: RATE 0 to 3 DEPENDING UPON UNIFORMITY OF RATE OF EXPRESSION USING MODEL AS PATTERN

RATE			0	1	2	3
3	Native rhythm and facility	Le tambour est à moi				
2	Uniform, even rate Smooth flow of expression	Il fait beau aujourd'hui. Pierre est sage en classe.				
1	Irregular or occational breaks; Regular but slow	Je mets mon pantalon gris. Il s'appelle Jean.				
0	Broken, halting; Words spoken as separate units.	Donnez-moi le livre s'il vous plait.				

INTONATION: RATE 0 - 3 DEPENDING UPON APPROPRIATE USE OF PITCH AND DURATION TO OBTAIN AUTHENTIC ACCENT, STRESS, AND MELODIC PATTERN IN DUPLICATION OF MODEL

RATE			0	1	2	3
3	Native melodic pattern of pitch	La sucette est rouge.				
	Authentic variation in pitch pattern	Voilà un drapeau américain.				
2	with correct usage of pitch and duration at end of sense groups	Mon chat s'appelle Minet. A qui est ce chien noir?				
	Rise or fall of pitch generally correct	Qui veut cacher le mouchoir?				
1	but limited variation	L'agent de police cherche mon lapin.				
	Flat, colorless, monotonic expression	Dessinez un poisson.				
0	Stress via loudness; Irreg. pitch variation	La bicyclette est pour moi?				

TOTAL R+I ☐☐

ORAL PRODUCTION: Three ratings are needed:

1. Correctness of response
2. Rhythm
3. Intonation

As the child responds to the questions enter two ratings - one for dialogue as indicated below, the second for rhythm. When completed, replay the tape and rate ten sentences for intonation.

DIALOGUE: RATE THE RESPONSE TO THE QUESTION AS FOLLOWS:
RATE 3 FOR A COMPLETE SENTENCE, NO ERRORS, CORRECT COMPREHENSION.
RATE 2 SENTENCE WITH WORD MISSING: ERROR IN NUMBER OR TENSE.
RATE 1 IF REPLY IS A WORD OR PHRASE BUT NOT A SENTENCE; COMPREHENSION OK
REPLY NOT.
RATE 0 NO RESPONSE OR COMPLETELY ERRONEOUS RESPONSE.

1. Comment vous appellez vous?
2. Quel âge avez-vous?
3. Quel jour est-ce aujourd'hui?
4. Quel temps fait-il?
5. Combien de frères avez-vous?
6. Combien font quatre et cinq?
7. De quelle couleur est le drapeau américain?
8. Quelle est la capitale de la France?
9. Où est la tour Eiffel?
10. Est-ce que Paris est au nord?
11. Où habite le président des Etats-Unis?
12. Quelle est la capitale des Etats-Unis?
13. En quelle saison sommes nous?
14. En quelle saison allez-vous nager?
15. Quel temps fait-il en hiver?
16. Vous faites du patin en hiver?
17. Il fait chaud en été?
18. A quoi jouent-ils?

RATE (All) DIALOGUE	RATE (Ten) RHYTHM	RATE (Ten) INTONATION
0 1 2 3	0 1 2 3	0 1 2 3

ENTER TOTAL SCORE FOR DIALOGUE ⟶ [ ][ ]

ENTER COMBINED R&I SCORE ON FIRST TEN COMPLETE RESPONSES. ⟶ [ ][ ]

Appendix B

Examiner passes out pencils, test booklets and answer sheets. She tells children to be sure that they have a pencil and an eraser and then asks them to fill in their last name, first name, age, male or female, teacher, date and school. She then says:

> Children, don't put any marks on your picture booklets. All of your writing will be done on the answer sheets with your special pencils. Look at the first page of pictures. On this page we have pictures of the four seasons of the year. They are lettered A, B, C and D. Now look at your answer sheets. The letters on the pictures go with the A, B, C and D on your answer sheets. I will say a number, then a sentence in French. You will fill in your answer next to the number I say. Find the picture that fits the sentence best, then fill in that space on your answer sheet next to the correct number. (Examiner draws on board.)

	A.	B.	C.	D.
1.				

Let's do number one. Ready? One. "Nous sommes en automne."

(Examiner fills in A beside 1 on the blackboard.)

Did you all fill in A on your answer sheet beside number one? Now, listen, then mark one of the spaces beside number two on your answer sheet.

2. Il neige.
3. Nous sommes en été.
4. Il fait chaud.
5. On va nager.
6. Ils jouent aux billes.
7. Il fait du patin.
8. Elles sautent à la corde.
9. Nous sommes en hiver.
10. Voilà un bateau.
11. L'oiseau est sur l'arbre.
12. Il fait froid.
13. Voilà un pont.
14. Il pleut.
15. Elle ferme la porte.
16. Voilà de la viande.
17. Elle a un chien blanc.
18. Il y a quatre fenêtres dans la maison.
19. Elle est dans le magasin.
20. Elle n'a pas de chiens.
21. Elle va acheter des fruits.
22. Voilà la salle à manger.
23. Nous sommes en décembre.
24. Elle prend le livre.
25. Les gants sont dans la boîte.
26. Le calendrier est sur le mur.

27. Elle met la dinde sur la table.
28. Il prend du lait.
29. Ça sent bon!
30. Les livres sont sur la chaise.
31. Regardez cette carte.
32. Il ouvre la boîte.
33. Les fleurs sont sur la table.
34. Les placards sont dans la cuisine.

Put your booklets aside and turn to number 46. on your answer sheet. I will say the time in French, you will look at the three clocks, decide which one shows the correct time and fill in the space A, B or C beside the correct clock. Let's try number 46 together for practice. Il est dix heures. (Pause) Did you all fill in "B" on your answer sheet? All right, let's continue.

47. Il est sept heures et quart.
48. Il est midi.
49. Il est onze heures vingt.
50. Il est trois heures moins le quart.
51. Il est neuf heures et demie.
52. Il est onze heures moins vingt.

Now we will continue doing the same thing with numbers.

A. quatorze
B. soixante-seize
C. trente
D. cent
E. quatre-vingt-douze
F. quatre-vingt-un
G. sept cent

Please pass your booklets and answer sheets forward. Now pass your pencils forward.

APPENDIX C

	A	B	C	D
1				
2				
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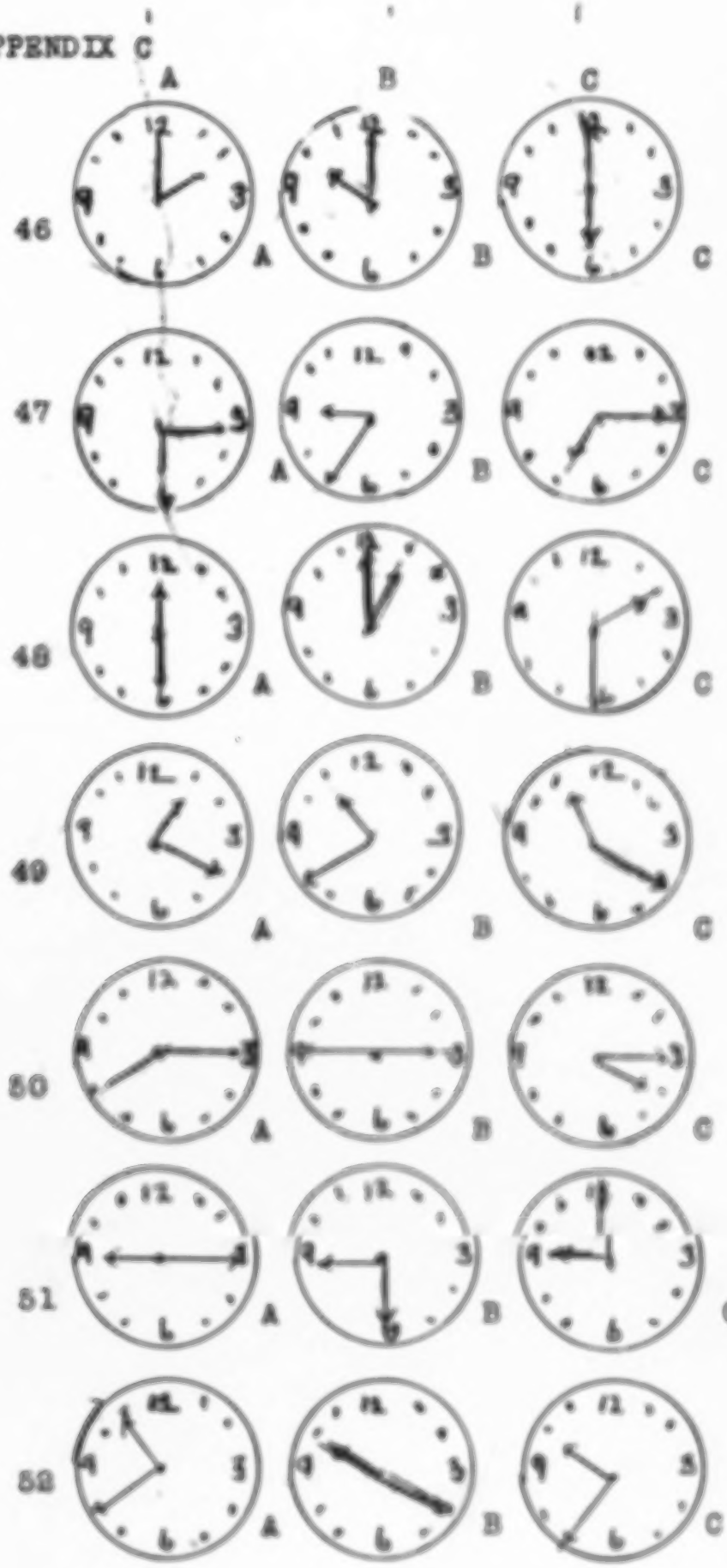

A	14	40	15
B	66	60	76
C	30	3	13
D	100	1000	500
E	42	82	92
F	81	71	41
G	800	700	17